Supporting Document No. 12
Item 11

Errata Sheet
for

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

TENTATIVE ORDER NO. R9-2005-0008
NPDES PERMIT NO. CA0107239

WASTE DISCHARGE REQUIREMENTS
FOR THE

UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY

SAN DIEGO COUNTY

The following changes are recommended for tentative Order No. R9-2005-0008. The deleted text is shown by *strikethrough* and the added is *underlined* text.

The subsequent numbering and minor typographic editing such as table of contents and page numbering will be completed after the adoption of the tentative Order.

Tentative Order

Modify Finding No. 1 as noted.

1. Since 1910 the ~~The~~ University of California, Scripps Institution of Oceanography (SIO), has been discharging waste seawater and urban runoff to the Pacific Ocean, adjacent to the San Diego Marine Life Refuge, near La Jolla, California. The San Diego Marine Life Refuge is designated as an *Area of Special Biological Significance* (ASBS).

Modify Finding No. 8 as noted.

8. Order No. 99-83 established an initial dilution factor of two to one (2:1) for the copper discharges from the SIO waste seawater discharges into the surf zone. The dilution factor was originally determined using best professional judgment but does not represent the results of an empirical study or the application of a valid computer model. This Order requires SIO to perform a study to determine the initial dilution and ~~fate~~ dispersion of the discharge during storm and non-storm periods. This Order ~~continues the 2:1 dilution factor for copper and~~ applies the 2:1 dilution factor to all constituents in the discharges at SIO.

The dilution factor may be modified by this Regional Board upon completion and evaluation of the dilution and dispersion study required by this Order.

Modify Finding No. 9.c as noted.

(c) Outfall 003: Discharges approximately 140,000 to ~~210,000~~ 200,000 gpd of waste seawater from the Experimental Aquarium and an additional 140,000 to 210,00 ~~100,000~~ gpd from the Ring Tank Complex when it is in use. The Ring Tank Complex is in use approximately twelve to sixteen weeks during the year. Storm water also discharges from this Outfall.

Modify Special Conditions as noted.

C. SPECIAL CONDITIONS

1. Numerical Effluent Limitations for Outfalls 001, 003, 004a, and 004b

a. Effective upon adoption of this Order, the dry weather discharges of ~~(1)~~ waste seawater~~; and/or (2) storm water that co-mingles or mixes with the waste seawater discharges in~~ from Outfalls 001, and 003~~, and (3) the seawater system discharges from Outfalls 004a or 004b~~ in excess of the limitations listed *Table 1. Table A Effluent Limitations* are prohibited. (3.a)

b. Effective three years after the adoption of this Order, the discharges of (1) waste seawater, and/or (2) storm water that co-mingles or mixes with the waste seawater discharges in Outfall 001, and 003, and (3) the seawater system discharges from 004a or 004b in excess of the limitations listed in *Table 1. Table A Effluent Limitations, Table 2. Protection of Marine Aquatic Life Effluent Limitations for the Seawater System Discharges, Table 3. Protection of Human Health-Noncarcinogens Effluent Limitations for Seawater System Discharges,* and *Table 4. Protection of Human Health-Carcinogens Effluent Limitations for Seawater System Discharges* are prohibited.

2. Narrative Effluent Limitations for Outfall 002

Whenever the analyses of municipal storm water discharges from Outfall 002 exceeds the effluent limitations listed in *Table 1. Table A Effluent Limitations, Table 2. Protection of Marine Aquatic Life Effluent Limitations for the Seawater System Discharges, Table 3. Protection of Human Health-Noncarcinogens Effluent Limitations for Seawater System Discharges,* and *Table 4. Protection of Human Health-Carcinogens Effluent Limitations for Seawater System Discharges* the discharger shall perform the following task:

a. review its Storm Water Management Plan/Program (SWMP) and modify the SWMP as necessary to reduce the concentrations of those constituents that exceed the effluent limitations;
b. after modifying the SWMP, sample and analyze the next storm water runoff event for the specific constituents that exceeded the effluent limitations, and compare to previous monitoring data and evaluate for best management practices (BMP) effectiveness and improvement; and
c. document the review and the modifications to the SWMP, and document the sampling analysis and comparison.

The discharger does not have to repeat the procedures listed above for continuing or recurring exceedences of the same constituent unless directed to by this Regional Board. (State Board Resolution No. 2004-0052, 3.p)

3. Bacterial Characteristics

Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline~~, and in area outside this zone used for water contact sports, as determined by this Regional Board, but including all kelp beds,~~ the following bacterial objectives shall be maintained throughout the water column:

c. If a ~~shore~~ surf zone sample consistently exceeds a coliform objective or consistently exceeds a geometric mean enterococcus density of 24 organisms per 100 mL for a 30-day period or 12 organisms per 100 mL for a six month period, the discharger shall conduct a survey to determine if its discharge is the source of the contamination. The geometric mean shall be a moving average based on no less than five samples per ~~month~~ 30-day period, spaced evenly over the time interval.

d. Based on the first year of monitoring results, this Regional Board may modify the frequency or the locations for bacteria monitoring.

4. Reports and Studies

a. An advisory committee created by the State Board, Chief of the Division of Water Quality, and composed of State and Regional Board staff, a representative from UCSD/SIO, and two scientist selected by the Regional Board from an academic organization other than UCSD/SIO shall define *Natural Water Quality* in the receiving water, seaward of the surf zone. The committee shall meet annually. The committee shall review the monitoring data and advise this Regional Board whether or not natural

water quality is being altered in the ASBS because of the discharges from SIO. (State Board Resolution No. 2004-0052, 3.a)

c. Within 6-months of the adoption of this Order, the discharger must submit a revised Storm Water Management Plan/Program (SWMP) that describes the necessary measures to be taken by SIO to prohibit non-storm water urban runoff (i.e. any discharge of urban runoff to a storm drain that is not entirely composed of storm water, except those discharges associated with fire fighting or other catastrophic events) and the reduction of pollutants in storm water discharges to the ASBS. The SWMP is subject to the approval of ~~the~~ this Regional Board. (State Board Resolution No. 2004-0052, 3.f & g)

d. The SWMP must include the following:
   i. Identify all known entry points for urban runoff entering the SIO storm water ~~sewer~~ conveyance system,
   ii. Identify all known entry points for the discharges associated with the seawater system,
   iii. Identify any other entry points for discharges to the storm water ~~sewer~~ conveyance system,
   iv. Identify the storm water ~~sewer~~ conveyance system discharge locations,
   v. A procedure to locate any illegal discharges to the storm water ~~sewer~~ conveyance system,
   vi. A procedure to revise the maps and SWMP,
   vii. A description of measures to eliminate non-storm water discharges to the storm water ~~sewer~~ conveyance system, including interim measures necessary to reduce non-storm water discharges until all non-storm water discharges are eliminated by January 1, 2007.
   viii. A description of storm water discharges (chemical and physical characteristics) and how the storm water pollutants will be reduced by implementing Best Management Practices (BMP),
   ix. A description of the BMP and an implementation schedule for the BMP,
   x. A description of the annual reduction in storm water discharge pollutants (due to reduction in the volume or reduction in concentration of pollutants) caused by the implementation of the BMP, and
   xi. The implementation schedule must be developed to ensure that non-structural BMP are implemented within one-year of the approval date by the Regional Board of the revised SWMP. (3.g, h, i, and j)

h. Within two-years of the adoption of this Order, the discharger must submit a report that determines the initial dilution ~~and dispersion~~ of the discharge during storm water

discharges, and during non-storm water discharges. The report may include a study that is empirical or uses a model. (State Board Resolution No. 2004-0052, 3.q)

~~i. Within two-years of the adoption of this Order, the discharger must submit a report that determines the fate of the discharge during storm water discharges, and during non-storm water discharges. The report may include a study that is empirical or uses a model. (3.q)~~

k. Within four-years of the adoption of this Order the discharge must conduct three bacterial studies to assess the impact, sources, and transport of bacteria during different conditions: once during dry weather, once during wet weather, and once when mammals are present in the Ring Tank. Each of the three studies shall be conducted over a five day period, during which sampling will be conducted concurrently from the outfall discharges, beach sediments, the surf zone, and nearshore, plus two stations outside the zone of influence of the outfalls. ~~Sampling shall occur several times~~ Monitoring shall be conducted as specified in *Table 5. Sampling Plan for Each Bacterial Study* to detect variability due to tides, temperature, or other factors. These studies should provide information on potential risks, sources, and natural or human-induced variability that weekly or monthly samples typically cannot resolve. It would also help inform the design of future monitoring to best fit the conditions of this area. ~~If frequent exceedences are found that appear to be connected to the SIO discharges, then DNA analysis could be performed as well to help determine what the sources are (e.g. sea birds, marine mammals, human sewage, etc.).~~ Equivalent bacterial monitoring conducted by the County of San Diego may be submitted to fulfill portions of this study requirement.

The study results shall be compiled and submitted to this Regional Board within four and a half-years of the adoption of this Order. The bacterial study shall use the sampling plan listed in *Table 5. ~~Proposed~~ Sampling Plan for Each Bacterial Study*. This sampling plan may be modified by this Regional Board.

Table 5. ~~Proposed~~ Sampling Plan for Each Bacterial Study.

Monitoring and Reporting Program No. R9-2005-0008

shall be modified as noted below.

Modify Effluent Monitoring B. as noted below.

B. EFFLUENT MONITORING

1. Table A and Table B Monitoring.

Effluent monitoring for the seawater system and storm water discharges from Outfall 001, 002, 003, 004a, and 004b shall be conducted at the discharge point to the beach (or at a location just upstream of the discharge point and where no additional pollutants or waste discharges can be added to the discharge), and shall be conducted as noted in *Table 1. Monitoring Requirements for Table A Effluent Limitations, Table 2. Monitoring Requirements for Protections of Marine Aquatic Life*, *Table 3. Monitoring Requirements for Protection of Human Health-Noncarcinogens,* and *Table 4. Monitoring Requirements for Protection of Human Health-Carcinogens.*

Monitoring data for the discharges from Outfalls 003, 004a, and 004b, may also be reported as a calculated flow weighted composite.

a. Initial Monitoring.

During the first year after the adoption of this Order, the discharger shall monitor the constituents listed in Tables 1, 2, 3, and 4 according to the following requirements:

i. The initial monitoring may be taken as grab samples.
ii. The semi-annual monitoring requirements in Tables 1, 2, 3, and 4 can be submitted as compliance with the Initial Monitoring.
iii. Equivalent monitoring conducted before the adoption of this Order can be submitted as compliance with the Initial Monitoring.
iv. Outfalls 001, 003, 004a, and 004b shall be monitored eight times before December 31, 2005, with no more than three monitoring events per calendar quarter.
v. Outfall 002 shall be monitored four times (three storm water events and one dry weather discharge, if possible) during the year. If a non-storm water discharge occurs from Outfall 002, the discharger shall monitor the discharge, once, if possible.

b. Modification of Frequency and Constituents.

Based on this Regional Board's evaluation of the Initial Monitoring results, this Regional Board may modify the frequency and constituents listed for the Ocean Plan Table A and Table B monitoring.

c. Safety.

The monitoring during a storm water discharge event must occur either during the storm water discharge or after the storm has passed and when the discharger can safely collect a water sample that is representative of storm water discharge conditions. The discharger must record and submit relevant information when a monitoring event does not occur because of unsafe conditions.

~~During the first year after the adoption of this Order, the discharge from Outfall 001 shall be sampled and analyzed twice quarterly, and the discharges from Outfalls 003, 004a, and 004b shall be combined as a flow weighted composite or by compositing the and sampled and analyzed twice quarterly. The quarterly sampling shall be grab samples.~~

~~During the first year after the adoption of this Order, the discharge from Outfall 002 shall be sampled and analyzed four times. The four sampling events may be grab samples. The four monitoring events shall monitor separate storm event discharges. If a discharge occurs at Outfall 002 during dry weather, a sample and analysis must be taken.~~

~~During the first year, two samples, once during dry weather and once during a storm water discharge, shall comply with the sampling as specified in the respective Tables (these two annual samples may be submitted as a component of the four sampling event requirement).~~

~~After the first year of monitoring sampling, the discharges from Outfall 001 shall be sampled and analyzed once during dry weather and once during a storm water discharge as specified in the respective Tables.~~

~~After the first year of monitoring sampling, the discharges from Outfall 002 shall be sampled and analyzed once during dry weather and once during a storm water discharge as specified in the respective Tables.~~

~~After the first year of monitoring sampling, the discharges from Outfalls 002, 003, 004a and 004b shall be combined as a flow weighted composite and shall be sampled and analyzed once during dry weather and once during a storm water discharge as specified in the respective Tables.~~

Modify Bacterial Monitoring as noted below.

2. Bacteria Monitoring

Annually, the discharges from Outfall 001, and 002 shall be ~~sampled and analyzed~~ monitored twice, once during dry weather discharge and once during a storm water discharge for fecal coliform, total coliform organisms, and enterococcus.

Annually, the discharges from Outfall 003, 004a and 004b ~~shall be combined as a flow weighted composite and~~ shall be ~~sampled and analyzed~~ monitored twice, once during dry weather discharge and once during a storm water discharge for fecal coliform, total coliform organisms, and enterococcus. The sample from Outfall 004b shall be collected during the sand filter backwash discharge. This monitoring data shall also be reported as a calculated flow weighted average.

When mammals are in the Ring Tank ~~is in use~~, the discharges from Outfall 003, shall be sampled and analyzed monthly for fecal coliform, total coliform organisms, and enterococcus.

Modify Table 2 as noted below.

Table 2. Monitoring Requirements for Protection of Marine Aquatic Life.

Constituent	Units	Sample Type	Analysis Frequency	Reporting Frequency
Flow	mgd	continuous	daily	quarterly
Arsenic	µg/L	composite	2/year**	Semi-annual
Cadmium	µg/L	composite	2/year**	Semi-annual
Chromium (hexavalent)[1]	µg/L	composite	2/year**	Semi-annual
Copper**, Outfall 001, only**	µg/L	composite	monthly	quarterly
Copper, **other Outfalls**	µg/L	composite	2/year**	Semi-annual
Lead	µg/L	composite	2/year**	Semi-annual
Mercury	µg/L	composite	2/year**	Semi-annual
Nickel	µg/L	composite	2/year**	Semi-annual
Selenium	µg/L	composite	2/year**	Semi-annual
Silver	µg/L	composite	2/year**	Semi-annual

1 The discharger may, at its option, meet this limitation as a total chromium limitation.

Constituent	Units	Sample Type	Analysis Frequency	Reporting Frequency
Zinc	µg/L	composite	2/year**	Semi-annual
Cyanide[2]	µg/L	composite	2/year**	Semi-annual
Total residual chlorine— **Outfall 003 only, when ~~in use~~ mammals are in the Ring Tank**	mg/L	grab	monthly	quarterly
Total chlorine residual[3], **other Outfalls**	µg/L	grab	2/year**	Semi-annual
Ammonia (as N)	µg/L	composite	2/year**	Semi-annual
Acute toxicity[4]	TUa	composite	2/year**	Semi-annual
Chronic toxicity[5]	TUc	composite	2/year**	Semi-annual
Phenolic compounds (non-chlorinated)	µg/L	composite	2/year**	Semi-annual
Chlorinated phenolics	µg/L	composite	2/year**	Semi-annual
Endosulfan[6]	µg/L	composite	2/year**	Semi-annual
Endrin	µg/L	composite	2/year**	Semi-annual

2 If the discharger can demonstrate to the satisfaction of the Regional Board (subject to EPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by the combined measurement of free cyanide, simple alkali metal cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by Standard Methods 412 F, G, and H (Standard Methods for the Examination of Water and Wastewater, Joint Editorial Board, American Public Health Association, American Water Works Association, and Water Pollution Control Federation, most recent edition) .

3 The effluent concentration and mass emission rate limitations for total chlorine residual are based on a continuous discharge of chlorine. Effluent concentration limitations for total chlorine residual, which are applicable to intermittent discharges not exceeding 2 hours, shall be determined through the use of the following equations:

$$\log Co = -0.43 (\log x) + 1.8$$

$$Ce = Co + Dm (Co - Cs)$$

where:

Co = the concentration (in ug/L) to be met at the completion of initial dilution
x = the duration of uninterrupted chlorine discharge in minutes
Ce = the effluent concentration limitation (in ug/L) to apply when chlorine is being intermittently discharged
Dm = the minimum probable initial dilution
Cs = the background seawater concentration = 0

4 Acute toxicity monitoring shall comply with methods and species as specified in the 2001 Ocean Plan and Resolution No. 2004-0052.

5 Chronic toxicity monitoring shall comply with methods and species as specified in the 2001 Ocean Plan.

6 Endosulfan shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

Constituent	Units	Sample Type	Analysis Frequency	Reporting Frequency
HCH[7]	µg/L	composite	2/year**	Semi-annual
Radioactivity	composite		2/year**	Semi-annual

Modify Table 5 as noted below.

Table 5. Monitoring and Reporting Schedule.

Reporting Frequency	Report Period	Report Due
Quarterly	January through March	~~May 1~~ June1
Quarterly	April through June	~~August 1~~ September 1
Quarterly	July through September	~~November 1~~ December 1
Quarterly	October through December	~~February 1~~ March 1
Semi-annually	January through June	~~August 1~~ September 1
Semi-annually	July though December	~~February 1~~ March 1

7 HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.